

METHOD AND APPARATUS FOR DTMF DETECTION AND VOICE MIXING IN THE CELP PARAMETER DOMAIN

ABSTRACT OF THE DISCLOSURE

A method and apparatus for DTMF detection and voice mixing in the code-excited linear prediction (CELP) parameter space, without fully decoding and reconstructing the speech signal. The apparatus includes a Dual Tone Multiplexed Frequency (DTMF) signal detection module and a multi-input mixing module. The DTMF signal detection module detects DTMF signals by computing characteristic features from the input CELP parameters and comparing them with known features of DTMF signals. The multi-input mixing module mixes multiple sets of input CELP parameters, that represent multiple voice signals, into a single set of CELP parameters. The mixing computation is performed by analyzing each set of input CELP parameters, determining the order of importance of the input sets, selecting a strategy for mixing the CELP parameters, and outputting the mixed CELP parameters. The method includes inputting one or more sets of CELP parameters and external commands, detecting DTMF tones, mixing multiple sets of CELP parameters and outputting the DTMF signal, if detected, and the mixed CELP parameters.

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